

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

267/#14 Y. 74

In re Patent Application of

FOULADI et al

Atty. Ref.: 723-959

Serial No. 09/726,215

Group: 2671

Filed: November 28, 2000

Examiner:

For: METHOD AND APPARATUS FOR BUFFERING

GRAPHICS DATA IN A GRAPHICS SYSTEM

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May 12, 2003

Assistant Commissioner for Patents Washington, DC 20231

Sir:

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Under 37 C.F.R. §§ 1.56 and 1.97, the applicant directs the attention of the Patent and Trademark Office to the items listed on the attached forms PTO-1449. These items were cited in copending commonly-assigned related patent applications as indicated in the appendix and not yet of record in this case. The Examiner is requested to cite and consider these items in this case.

Applicant is attaching copies of all items other than U.S. patents. The U.S. patents are readily available to the Examiner; applicant will submit a copy upon request.

Should the examiner need anything further to consider these items, please contact the undersigned at the telephone number listed below.

In the event a first Office Action has already been mailed, please treat this paper as a submission under 37 C.F.R. § 1.97(c) and charge Deposit Account No. 14-1140 for the fee required by 37 C.F.R. § 1.17(p). The U.S. Patent and Trademark Office is authorized to charge any fee which was asserted to have been filed or which should have been filed and to credit any overpayment, to that same Deposit Account No. 14-1140.

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¹ The identification of the co-pending U.S. Patent Applications in the appendix is not to be construed as a waiver of secrecy as to those applications now or upon issuance of this application as a patent.

Respectfully submitted,

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APPENDIX

The items cited on the attached form PTO-1449 is of record in the co-pending related commonly-assigned patent applications as indicated below:

I. <u>Application No. 09/465,754 filed December 17, 1999 (atty. dkt. no. 723-799)</u> entitled "Vertex Cache For 3D Computer Graphics":

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WO/93/04429
                 PCT
                 Collmeyer et al.
    4,491,836
   4,653,012
                 Duffy et al.
                 Keeley et al.
   4,695,943
   4,710,876
                 Cline et al.
   4,768,148
                 Keeley et al.
                 Keeley
   4,785,395
   4,790,025
                 Inoue et al.
   4,812,988
                 Duthuit et al.
   4,829,452
                Kang et al.
                Barlow et al.
   4,833,601
   4,965,751
                Thayer et al.
   4,975,977
                 Kurosu et al.
                Frederickson et al.
   5,056,044
   5,086,495
                Gray et al.
                Einkauf et al.
   5,163,126
   5,179,638
                Dawson et al.
   5,353,424
                Partovi et al.
   5,448,689
                Matsuo et al.
   5,657,045
                Katsura et al.
   5,657,443
                Krech, Jr.
                Nonoshita
   5,659,673
                Yamazaki et al.
   5,726,947
                Rosenthal et al.
   5,740,406
   5,745,125
                Deering et al.
                Butterfield et al.
   5,748,986
   5,751,930
                Katsura et al.
   5,754,191
                Mills et al.
                Norrod et al.
   5,801,720
   5,821,940
                Morgan et al.
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5,821,940	Morgan et al
5,822,516	Krech, Jr.
5,838,334	Dye
5,886,701	Chauvin et al.
5,887,155	Laidig
5,940,089	Dilliplane
5,949,421	Ogletree et al.
5,995,120	Dye
6,088,701	Whaley et al.
6,226,713 B1	Mehrotra
6,292,194 B1	Powll, III
6,408,362 B1	Arimilli et al.
6,426,747	Hoppe et al.
6,459,429	Deering

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White paper, Rogers, Douglas H., "Optimizing Direct3D for the GeForce 256" (1/3/2000)

Hook, Brian, "An Incomplete Guide to Programming DirectDraw and Direct3D Immediate Mode (Release 0.46)," printed from web site: www.wksoftware.com, 42 pages

Thompson, Tom, "Must-See 3-D Engines," BYTE MAGAZINE, printed from web site www.byte.com, 10 pages (June 1996)

Thompson, Nigel, "Rendering with Immediate Mode," Microsoft Interactive Developer Column: Fun and Games, printed from web site msdn.microsoft.com, 8 pages (March 97)

"HOWTO: Animate Textures in Direct3D Immediate Mode," printed from web site support.microsoft.com, 3 pages (last reviewed 12/15/2000)

INFO: Rendering a Triangle Using an Execute Buffer," printed from web site support.microsoft.com, 6 pages (last reviewed 10/20/2000)

U.S. application Serial No. 09/337,293, filed 6/21/1999, "Multi-Format Vertex Data Processing Apparatus and Method

Datasheet, SGS-Thomson Microelectronics, nVIDIATM, RIVA 128TM 128-Bit 3D Multimedia Accelerator (10/1997)

Product Presentation, "RIVA128™ Leadership 3D Acceleration," 2 pages Hoppe, Hugues, "Optimization of Mesh Locality for Transparent Vertex Caching," PROCEEDINGS OF SIGGRAPH, pages 269-276 (August 8-13, 1999)

- II. Application No. 09/726,223 filed November 28, 2000 (atty. dkt. no. 723-751)
 entitled "Z Value Clamping In Near-Z Range To Maximize Precision Of Visually
 Important Z Components And To Avoid Near-Z Clipping In A Graphics
 Rendering System":
 - 4,888,712 BARKANS et al.
 - 4,907,174 PRIEM
 - 5,819,017 Akeley et al.
 - 5,856,829 GRAY, III et al.
 - 5,923,332 IZAWA
 - 5,926,182 MENON et al.
 - 5,982,376 ABE et al.
 - 5,986,659 GALLERY et al.
 - 6,046,746 DEERING
 - 6,052,129 FOWLER et al.
 - 6,144,387 LIU et al.
 - 6,157,387 KOTANI
 - 6,285,779 Lapidous et al.
- III. Application No. 09/722,419 filed November 28, 2000 (atty. dkt. no. 723-958) entitled "Graphics Pipeline Token Synchronization":
 - 4,989,138 Radochonski
 - 5,345,541 Kelley et al
 - 5,467,459 Alexander et al.
 - 5,487,146 Guttag et al.
 - 5,768,629 Wise et al.
 - 5,828,907 Wise et al.
 - 5,835,792 Wise et al.
 - 5,872,902 Kuchkuda et al.
 - 5,982,390 Stoneking et al.
 - 6,046,752 Kirkland et al.
 - 6,252,610 Hussain
 - 6,476,808 Kuo et al.
- IV. Application No. 09/722,382 filed November 28, 2000 (atty. dkt. no. 723-961) entitled "Method And Apparatus For Direct and Indirect Texture Processing In A Graphics System":
 - 4,692,880 MERZ et al.

4,935,879	UEDA
5,003,496	HUNT, Jr. et al.
5,422,997	NAGASHIMA
5,469,535	JARVIS et al.
5,495,563	WINSER
5,548,709	HANNAH et al.
5,582,451	COX et al.
5,586,234	SAKURABA et al.
5,664,162	DYE
5,696,892	REDMANN et al.
5,706,481	HANNAH et al.
5,726,689	NEGISHI et al.
5,734,386	COSMAN
5,745,118	ALCORN et al.
5,751,292	EMMOT
5,764,237	KANEKO
5,777,623	SMALL
5,831,625	RICH et al.
5,831,640	WANG et al.
5,835,096	BALDWIN
5,861,888	DEMPSEY
5,877,770	HANAOKA
5,892,517	RICH
5,926,647	ADAMS et al.
5,945,997	ZHAO et al.
5,963,220	LEE et al.
5,987,567	RIVARD et al.
5,999,198	HORAN et al.
6,002,407	FADDEN
6,011,565	KUO et al.
6,040,844	YAMAGUCHI et al.
6,046,747	SAUNDERS et al.
6,052,126	SAKURABA et al.
6,057,849	HAUBNER et al.
6,057,851	LUKEN et al.
6,057,861	LEE et al.

VAN HOOK

6,353,438

Whitepapers: "Texture Addressing," Sim Dietrich, January 6, 2000, www.nvidia.com

V. <u>Application No. 09/722,367 filed November 28, 2000 (atty. dkt. no. 723-968)</u> entitled "Recirculating Shade Tree Blender For A Graphics System":

Sims et al. 4,586,038 Luken, Jr. 5,278,948 5,561,752 **Jevans** 5,678,037 Osugi et al. Myhrvold et al. 5,867,166 5,949,428 Toelle et al. 5,999,189 Kajiya et al. 6,016,151 Lin Sprague et al. 6,043,821 Gossett et al. 6,236,413 6,331,856 Van Hook et al.

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The RenderMan Interface Version 3.1," (September 1989)

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NVIDIA.com, technical presentation, "Advanced Pixel Shader Details" (11/10/2000)

"Developer's Lair, Multitexturing with the ATI Rage Pro," (7 pages) from ati.com web site (2000)

VI. Application No. 09/726,218 filed November 28, 2000 (atty. dkt. no. 723-960) entitled "Method And Apparatus For Efficient Generation Of Texture Coordinate Displacements For Implementing Emboss-Style Bump Mapping In A Graphics Rendering System":

5,900,881 IKEDO

5,880,736 PEERCY et al.

5,808,619 CHOI et al.

4,808,988 BURKE et al.

6,014,144	NELSON et al.
5,224,208	MILLER, JR. et al.
6,078,334	HANAOKA et al.
5,561,746	MURATA et al.
5,659,671	TANNENBAUM et al.
4,974,177	NISHIGUCHI
6,081,274	SHIRAISHI
6,031,542	WITTIG
5,621,867	MURATA et al.

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VII. Application No. 09/722,381 filed November 28, 2000 (atty. dkt. no. 723-962) entitled "Method And Apparatus For Environment-Mapped Bump-Mapping In A Graphics System":

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              EUROPEAN
              YAN et al.
   4,615,013
              WINSER
   5,544,292
   5,563,989
              BILLYARD
              PEARCE et al.
   5,809,219
              TAROLLI et al.
   5,870,102
   5,923,334
              LUKEN
   5,956,043
              JENSEN
              VAN OVERVELD
   6,049,337
   6,052,127
              VASWANI et al.
   6,078,333
              WITTIG et al.
              PRIEM et al.
   6,191,794
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VIII. <u>Application No. 09/726,216 filed November 28, 2000 (atty. dkt. no. 723-967)</u> entitled "Achromatic Lighting in a Graphics System and Method":

4,275,413 Sakamoto et al.5,016,183 Shyong5,097,427 Lathrop et al.

5,361,386	Watkins et al.
5,467,438	Nishio et al.
5,473,736	Young
5,495,563	Winser, Paul A.
5,504,499	Horie et al.
5,557,712	Guay
5,566,285	Okada
5,649,082	Burns
5,687,304	Kiss, Kenneth W.
5,740,343	Tarolli et al.
5,943,058	Nagy
5,956,042	Tucker et al.
6,023,261	Ugajin
6,232,981	Gossett, Carroll Philip
6,239,810	Van Hook et al.
6,417,858	Bosch et al.

White paper, Dietrich, Sim, "Cartoon Rendering and Advanced Texture Features of the GeForce 256 Texture Matrix, Projective Textures, Cube Maps, Texture Coordinate Generation and DOTPRODUCT3 Texture Blending" (12/16/1999)

IX. <u>Application No. 09/726,226 filed November 28, 2000 (atty. dkt. no. 723-964)</u> entitled "Method And Apparatus For Anti-Aliasing In A Graphics System":

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4,897,806
           COOK et al.
5,239,624
           COOK et al.
5,394,516
           WINSER
5,600,763
           GREENE et al.
5,651,104
           COSMAN
5,764,228
           BALDWIN
5,818,456
           COSMAN et al.
5,859,645
           LATHAM
5,877,771
           DREBIN et al.
5,943,060
           COSMAN et al.
5,949,428
           TOELLE et al.
6,028,608
           JENKINS
6,038,031
           MURPHY
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6,469,707 B1 Douglas Voorhies 6,496,187 B1 Michael Deering et al.

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X. Application No. 09/722,380 filed November 28, 2000 (atty. dkt. no. 723-957) entitled "Graphics System With Embedded Frame Buffer Having Re-configurable Pixel Formats":

5,018,076 JOHARY et al. MASTERSON et al. 5,241,658 5,307,450 Grosssman 5,543,824 PRIEM et al. 5,559,954 SAKODA et al 5,650,955 PUAR et al. RECKER et al. 5,657,478 5,694,143 Fielder et al. 5,703,806 PUAR et al. PRIEM et al. 5,742,788 5,890,190 Rutman LIPPINCOTT 5,914,729 5,933,154 HOWARD et al. 6,041,010 PUAR et al. 6,075,543 **AKELEY** 6,215,497 Leung PUAR et al. 6,356,497 6,476,822 Burbank

Videum Conference Pro (PCI) Specification, product of Winnov (Winnov), published 7/21/1999

XI. Application No. 09/585,329 filed June 2, 2000 entitled "Variable Bit Field Color Encoding" (atty. dkt. no. 723-749):

4,918,625 Yan

5,416,606 Katayama et al.

5,606,650	Kelley et al.
5,767,858	Kawase et al.
5,805,175	Priem
5,880,737	Griffen et al.
5,886,705	Lentz
5,894,300	Takizawa
5,914,725	Mcinnnis et al.
5,986,663	Wilde
6,005,583	Morrison
6,005,584	Kitamura et al.
6,016,150	Lengyel et al.
6,054,993	Devic et al.
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10.2 Alpha Blending,

http://www.sgi.com/software/opengl/advanced98/notes/node146.html

10.3 Sorting, http://www.sgi.com/software/opengl/advanced98/notes/node147.html 10.4 Using the Alpha Function,

http://www.sgi.com/software/opengl/advanced98/notes/node148.html

Winner, Stephanie, et al., "Hardware Accelerated Rendering Of Antialiasing Using A Modified A-buffer Algorithm," Computer Graphics Proceedings, Annual Conference Series, 1997, pp 307-316

XII. Application No. 09/726,212 filed November 28, 2000 (atty. dkt. no. 723-956) entitled "Method And Apparatus For Dynamically Reconfiguring The Order Of Hidden Surface Processing Based On Rendering Mode":

5,144,291 Nishizawa

5,268,995 Diefendorff et al.

6,052,125 Gardiner et al.

6,111,584	Murphy, Nicholas J.N.
6,144,365	Young et al.
6,166,748	Van Hook et al.
6,172,678 B1	Shiraishi
6,204,851B1	Netschke et al.

XIII. <u>Application No. 09/726,212 filed November 28, 2000 (atty. dkt. no. 723-973)</u> entitled "Method And Apparatus For Providing Non-Photorealistic Cartoon Outlining Within A Graphics System":

5,091,967	Ohsawa
5,666,439	Ishida et al
5,684,941	Dye
5,757,382	Lee
5,933,529	Kim
5,940,538	Spiegel et al
6,021,417	Massarksy
6,026,182	Lee et al
6,038,348	Carley
6,061,462	Tostevin et al
6,088,487	Kurashige

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Feth, Bill, "Non-Photorealistic Rendering," wif3@cornell.edu, CS490 – Bruce Land, 5 pages (Spring 1998)

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Hachigian, Jennifer, "Super Cel Shader 1.00 Tips and Tricks," 2 pages, wysiwyg://thePage.13/http://members.xoom.com/_XMCM.jarvia/3D/celshade.html

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Toony Shaders, "Dang I'm tired of photorealism," 4 pages,

http://www.visi.com/~mcdonald/toony.html

"Cartoon Shading, Using Shading Mapping," 1 page,

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VIDI Presenter 3D Repository, "Shaders." 2 pages, http://www.webnation.com/vidirep/panels/renderman/shaders/toon.phtml

XIV. Application No. 09/726,225 filed November 28, 2000 (atty. dkt. no. 723-954) entitled "Method And Apparatus For Providing Improved Fog Effects In A Graphics System":

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   4,463,380
              STEINER et al.
   5,268,996
   5,357,579 BUCHNER et al.
              BAKER et al.
   5,363,475
              OLIVE
   5,412,796
   5,415,549
              LOGG
   5,432,895
              MYERS
   5,535,374
              OLIVE
   5,573,402
              GRAY
   5,616,031
              LOGG
   5,724,561
              TAROLLI et al.
   5,977,984
              OMORI
   5,990,903
              DONOVAN
  6,005,582
              GABRIEL et al.
  6,064,392
              ROHNER
6,268,861 B1
              Sanz-Pastor et al.
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6,342,892 B1

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XV. Application No. 09/722,664 filed November 28, 2000 (atty. dkt. no. 723-969) entitled "Controller Interface For A Graphics System":

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           BOUTON et al.
5,607,157
           NAGASHIMA
5,628,686
           SVANCAREK et al.
5,638,535
           Rosenthal et al.
           SCOTT-JACKSON et al.
5,714,981
5,791,994
           HIRANO et al.
5,892,974
           KOIZUMI et al.
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           EVOY et al.
6,007,428
           NISHIUMI et al.
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TAKEDA et al.

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6,078,311 Pelkey, Michael H.
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XVI. <u>Application No. 09/726,221 filed November 28, 2000 (atty. dkt. no. 723-955)</u> entitled "Method And Apparatus For Texture Tiling In A Graphics System":

BUCHNER et al. 4,974,176 FORAN et al. 5,490,240 MIGDAL et al. 5,760,783 5,828,382 WILDE TAROLLI et al. 5,831,624 5,844,576 WILDE et al. 6,002,410 **BATTLE** 6,049,338 ANDERSON et al.

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6,104,415 GOSSETT

6,466,223 B1 Dorbie et al.

XVII. <u>Application No. 09/722,378 filed November 28, 2000 (atty. dkt. no. 723-965)</u> entitled "Z-Texturing":

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5,751,291 Olsen et al

5,914,721 Lim

5,949,423 Olsen

5,977,979 Clough et al

6,037,948 Liepa

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6,111,582 Jenkins

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XVIII. <u>Application No. 09/723,336 filed November 28, 2000 entitled "Application Program Interface for a Graphics System" (atty. dkt. no. 723-976):</u>

9-330230	JAPAN
5,404,445	Matsumoto
5,432,900	Rhodes et al
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5,751,295	Becklund et al
5,861,893	Strugess, Jay J.
5,870,587	DANFORTH et al.
5,920,876	UNGAR et al.
5,936,641	Jain et al
5,995,121	Alcokrn et al
6,052,133	Kang
6,057,863	Olarig
6,151,602	HEJLSBERG et al.
6,177,944	FOWLER et al.
6,275,235	Morgan, III, David L.

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XIX. Application No. 09/722,663 filed November 28, 2000 (atty. dkt. no. 723-963) entitled "Graphics System With Copy Out Conversions Between Embedded Frame Buffer And Main Memory":

4,357,624	GREENBERG
4,817,175	TENENBAUM et al.
5,062,057	BLACKEN et al.
5,204,944	WOLBERG et al.
5,315,692	HANSEN et al.
5,461,712	CHELSTOWSKI et al.
5,506,604	NALLY et al.
5,608,864	BINDLISH et al.
5,644,364	KURTZE et al.
5,691,746	SHYU
5,801,711	KOSS et al.

- 5,808,630 PANNELL **BLIXT** 5,815,165 5,828,383 MAY et al. 5,877,741 CHEE et al. 5,909,225 SCHINNERER et al. 5,912,676 MALLADI et al. 5,936,683 LIN 6,020,931 BILBREY et al. 6,040,843 MONROE et al. 6,043,804 **GREENE** 6,067,098 DYE 6,097,435 STANGER et al. 6,097,437 HWANG 6,115,047 **DEERING**
- XX. <u>Application No.09/722,665 filed November 28, 2000 (atty. dkt. no. 723-970)</u> entitled "Method and Apparatus for Accessing Shared Resources":
 - 5,682,522 HUANG et al.
 5,706,482 MATSUSHIMA et al.
 5,740,383 NALLY et al.
 5,781,927 WU et al.
 5,903,283 SELWAN et al.
 5,959,640 RUDIN et al.
 5,986,677 JONES et al.
 - 6,008,820 Chauvin et al.6,035,360 Doidge et al
 - 6,057,862 MARGULIS
 - 6,078,338 HORAN et al.
 - 6,091,431 SAXENA et al.
 - 6,104,417 NIELSEN et al.
 - 6,105,094 LINDEMAN
 - 6,108,743 DEBS et al.
 - 6,118,462 MARGULIS

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4,600,919 Stern 5,475,803 Stearns et al Cosman, Michael A. 5,579,456 5,748,199 Palm Edelsbrunner et al. 5,850,229 Rouet et al. 5,883,638 5,909,218 Naka et al. Laperriere 5,912,675 Ngo et al. 5,933,150 6,011,562 Gagne et al. 6,054,999 Strandberg Handelman et al. 6,057,859 6,072,496 Guenter et al. 6,088,042 Handelman et al. We et al. 6,329,997

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[&]quot;Skeletal Animation and Skinning," from ATI.com web site, 2 pages (Summer

2000)

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Matsumoto
Itoh
Scheibl
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Bar-Nahum
Foran et al.
Snyder et al.
Gardiner
Arias
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